

# ENERGY INTRODUCTION

Energy is a critical factor in our daily lives. The energy in the food we eat serves as fuel for our life processes. Food itself is a result of the sun's energy, thanks to plants and the process of photosynthesis. Humans began to manipulate energy sources thousands of



Image: Gretz, Warren

years ago, learning to control food supplies through agricultural practices and harnessing energy in the form of fire to generate warmth and light. In the modern industrial age our relationship with energy has become more sophisticated than ever. We are now dependent on having easy access to complex forms of energy on a daily basis. Energy is used to drive to work, heat and cool our homes, provide light indoors and at night, and power most of our technology-based tools.

Most of us take for granted the light bulb that comes on when we flip a switch. We assume our homes will be warm when it is bitterly cold outside. We fuel our cars for the transportation our highly mobile society requires. Our ability to control energy has changed the very nature of our relationship to the earth. We routinely cover vast distances, live in very cold or hot climates, and process vast quantities of raw materials used to produce the myriad of products we use in our lives. *We live by manipulating energy.* It is only during the occasional power outage or gas shortage that we realize how important energy is to us. Our continued success as a society depends on our ability to develop energy sources that are plentiful, renewable and environmentally sound.

As recently as 200-300 years ago, humans met a substantial amount of their energy needs using renewable energy sources such as wood for heat, watermills for grinding crops or wind to propel sailing vessels. Today, nonrenewable fuels such as oil, gas and coal provide the majority of the energy we use to fuel our modern technologically-based societies. The use of fossil fuels certainly has played a significant role in propelling our society forward from a horse-and-cart transportation system.



Image: Gretz, Warren

While fossil fuels can be expected to remain an important component of our energy use, recent developments in energy generating systems show significant promise. "Alternative" energy sources such as wind power, solar energy, biomass and geothermal power systems now offer approaches to providing energy that are renewable, while reducing our impact on the environment. We have only begun to tap our resources concerning these renewable energy sources. The future of energy is exciting. As we transition from a fossil fuel-based society to a future based on other energy sources, the "alternative" may no longer be alternative - it will likely become the norm.

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***ENERGY:  
THE  
CAPACITY TO  
DO WORK!***